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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/509,476	09/29/2004	Leon Maria Van De Kerkhof	NL 020297	1366

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PHILIPS INTELLECTUAL PROPERTY & STANDARDS
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EXAMINER	
FAULK, DEVONA E	
ART UNIT	**PAPER NUMBER**
2615	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/12/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/509,476	VAN DE KERKHOF ET AL.	
	Examiner	Art Unit	
	Devona E. Faulk	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 September 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 September 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

The applicant's preliminary amendment filed on 9/29/2004 has been entered.

Drawings

1. The drawings are objected to because Figure 3 discloses a flow diagram but fails to provide any labeling that would indicated what is being performed or what is occurring at each step. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 12-14 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 12 and 13 recite a signal format and claim 14 a record carrier. A signal format and record carrier are non-statutory subject matter.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-11 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claims 1 and 10 recite "wherein the composition of M signals is orthogonalized prior to encoding" and orthogonalizing the composition of M signals prior to encoding". Claims 8 and 11 recite "wherein the composition of M signals is de-orthogonalized prior to the generation of N output signals". Claim 2 recites "wherein the orthogonalizing is done by switching between sum/difference coding and independent coding. Claim 7 recites "wherein the orthogonalization is performed per frequency band". The specification discloses on page 3, "Preferably, orthogonalization is done by

switching between independent coding and sum/difference coding. For example, sum/difference signal coding of the compatible signal, i.e. the composition of M signals, is used in case of a dominant center situation or a dominant surround situation, and independent coding is used in other situations. In an embodiment of the invention, the encoder includes a control signal in the encoded signal to indicate to the decoder how the orthogonalizing has been performed and consequently how the de-orthogonalizing should be performed. Preferably, M=2. Preferably, orthogonalization is done in the frequency domain. Preferably, switching between independent coding and sum/difference coding can be selected per frequency band. " The specification further discloses on page 4" The orthogonalizing unit 12 further provides a control signal to indicate to the decoder how the orthogonalizing has been performed and consequently how the de-orthogonalizing should be performed. The encoding preferably is a so-called "perceptual audio encoding", whereby each of a succession of time domain blocks of an audio signal is coded in the frequency domain. Specifically, the frequency domain representation of each block is divided into bands, each of which is coded based on psycho-acoustic criteria, so that the audio signal is compressed efficiently.". The specification fails to disclose how orthogonalization/de-orthogonalization is achieved, i.e. how does switching between sum/difference coding and independent coding result in orthogonalization.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. **Claims 1,4-5 and 10** are rejected under 35 U.S.C. 103(a) as being unpatentable over L. M. van de Kerkhof et al. *MPEG1 and MPEG2 Audio Coding Algorithms and implementation* in view of Yagasaki et al. (US 6,266,482).

Regarding **claim 1**, van de Kerkhof discloses a method for encoding N input signals Figure 1 page 237), with N>2, said method comprising the steps of:

generating from the N input signals a composition of M signals, with N>M≥2 (Figure 1, page 237),

encoding the composition of M signals into coded data (Figure 1, page 237),

encoding a selection of N-M out of the N input signals into coded data (Figure 1, page 237).

Van de Kerkhof fails to disclose wherein the composition of M signals is orthogonalized prior to encoding.

Orthogonal transforming can be applied to any set of data. Yagasaki discloses orthogonalizing before encoding (column 14, lines 31-34 and column 15, lines 43-45). It

would have been obvious to modify Van de Kerkhof by orthogonalizing before encoding as taught by Yagasaki in order to obtain optimal preservation of the original signal.

Regarding **claim 4**, van de Kerkhof as modified by Yagasaki discloses wherein the composition of M signals is coded into a first bit-stream, and the selection of N-M signals is coded into second bit-stream (Figure 1, page 237).

Regarding **claim 5**, van de Kerkhof as modified by Yagasaki discloses wherein M=2 (Figure 1, page 237).

Regarding **claim 10**, van de Kerkhof discloses an apparatus for encoding N input signals Figure 1 page 237), with N>2, said apparatus comprising means for:

generating from the N input signals a composition of M signals, with $N>M\geq 2$ (matrix, Figure 1, page 237),

encoding the composition of M signals into coded data (MPEG1 encoder, Figure 1, page 237),

encoding a selection of N-M out of the N input signals into coded data (MPEG2 extension encoder, Figure 1, page 237).

Van de Kerkhof fails to disclose wherein the composition of M signals is orthogonalized prior to encoding.

Orthogonal transforming can be applied to any set of data. Yagasaki discloses orthogonalizing before encoding (column 14, lines 31-34 and column 15, lines 43-45). It would have been obvious to modify Van de Kerkhof by orthogonalizing before encoding as taught by Yagasaki in order to to obtain optimal preservation of the original signal..

6. **Claims 8,11** are rejected under 35 U.S.C. 103(a) as being unpatentable over L. M. van de Kerkhof et al. *MPEG1 and MPEG2 Audio Coding Algorithms and implementation* in view of Gerzon (US 5,594,800).

Regarding **claims 8 and 11**, van de Kerkhof discloses a method (apparatus) for decoding coded data representative of N signals, the coded data comprising a composition of M signals and a set of N-M signals, with N>M≥2 (Figure 1, page 237), , the method for decoding comprising:

decoding the coded data to obtain the composition of M signals and the set of N-M signals (Figure 1, page 237),

generating a set of N output signals from the composition of M signals and the set of N-M signals (Figure 1, page 237).

Van de Kerkhof fails to disclose that the composition of M signals is orthogonalized and wherein the composition of M signals is de-orthogonalized prior to the generation of N output signals.

Gerzon discloses orthogonalizing signals (column 26, line 5-column 8, line 31;column 64, line 28-column 67, line 13) and de-orthogonalizing obviously has to be done as it is the inverse of orthogonalizing (column 19, lines 24-column 20, line 13).

It would have been obvious to modify van de Kerkhof as modified by Gerzon to orthogonalize M signals and to de-orthogonalize in order to provide optimal preservation of the original signal.

7. **Claim 6** is rejected under 35 U.S.C. 103(a) as being unpatentable over L. M. van de Kerkhof et al. *MPEG1 and MPEG2 Audio Coding Algorithms and implementation* as

applied above to claim 1 in view of Yagasaki et al. (US 6,266,482) as applied above to claim 1 in further view of Boykin et al. (US 2003/0079222).

Regarding **claim 6** van de Kerkhof as modified by Yagasaki discloses wherein the N signals are encoded (Kerkhof, Figure 1). Van de Kerkhof as modified by Yagasaki fails to disclose that the input signals are transformed to a frequency domain before encoding. Boykin discloses signals that are transformed to a frequency domain before encoding (page 15, paragraph 0131). It would have been obvious to modify Kerkhof as modified by Yagasaki by transforming the input signals before they are encoded in order to be able to better reconstruct the exact original data.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Devona E. Faulk whose telephone number is 571-272-7515. The examiner can normally be reached on 8 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on 571-272-7848.

The Art Unit location of your application in the USPTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Art Unit 2615. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DEF

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